

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (previously amended): An electrochemical cell comprising:

a membrane electrode assembly;

a first reactant flow field plate for providing a first reactant flow field disposed on one side of the membrane electrode assembly;

a first seal disposed between the first reactant flow field plate and the membrane electrode assembly for impeding leakage of process fluids of the electrochemical cell;

a first gas diffusion layer disposed between the first reactant flow field plate and the membrane electrode assembly for diffusing reactant from the first reactant flow field to the membrane electrode assembly, the first gas diffusion layer including:

a first side facing the first reactant flow field plate and a second side facing the membrane electrode assembly;

a porous body for diffusing the reactant from the reactant flow field to the membrane electrode assembly; and

an edge portion surrounding the porous body, the edge portion abutting the first seal and the membrane electrode assembly;

wherein on the first side of the first gas diffusion layer a thickness of the edge portion is reduced in relation to the porous body to provide a step between the porous body and the edge portion, the step for engaging the first seal; and

wherein the first seal has a thickness corresponding with a height of the step, such that the second side of the first gas diffusion layer provides a substantially flat surface for supporting the membrane electrode assembly to impede substantial distortion of the membrane electrode assembly at the first seal.

Claim 2 (canceled).

Claim 3 (canceled).

Claim 4 (canceled).

Claim 5 (previously amended): The electrochemical cell of claim 1, further comprising a sealing insert provided on the edge portion to impede leakage of the process fluids.

Claim 6 (canceled).

Claim 7 (previously amended): The electrochemical cell of claim 5, wherein the seal is a sealing gasket and the sealing insert comprises a slot for accommodating the sealing gasket.

Claim 8 (previously amended): The electrochemical cell of claim 7, wherein the sealing insert has a thickness substantially equal to a thickness of the porous body and has an insert step for engaging the step on the gas diffusion layer.

Claim 9 (previously amended): The electrochemical cell of claim 8, wherein the sealing insert is substantially impermeable to the process fluids.

Claim 10 (previously amended): The electrochemical cell of claim 9, wherein the sealing insert comprises a silk screened gasket.

Claim 11 (previously amended): A method of impeding leakage of process fluids from an electrochemical cell, the electrochemical cell including a membrane electrode assembly, a first reactant flow field plate for providing a first reactant flow field disposed on one side of the membrane electrode assembly, a seal disposed between the first

reactant flow field plate and the membrane electrode assembly for impeding leakage of process fluids of the electrochemical cell, and a second reactant flow field plate for providing a second reactant flow field disposed on the other side of the membrane electrode assembly, the method comprising:

providing a gas diffusion layer disposed between the first reactant flow field plate and the membrane electrode assembly; and

providing the gas diffusion layer with an edge portion for supporting the membrane electrode assembly at a periphery between the first reactant flow field plate and the seal to impede substantial distortion of the membrane electrode assembly between the first reactant flow field plate and the seal;

wherein the edge portion surrounds a porous body, the porous being permeable to the process fluids, the edge portion is thinner than the porous body, the porous body comprises a first side and a second side, the thickness of the edge portion is reduced on the second side to provide a step on the second side, and the gas diffusion layer is installed such that the first side faces the membrane electrode assembly and the step on the second side faces and engages the seal, and

wherein the seal has an insert thickness substantially equal to a height of the step and the method further comprises installing the seal and the gas diffusion layer such that the second side of the gas diffusion layer provides a substantially flat surface for supporting the membrane electrode assembly.

Claim 12 (original): The method as defined in claim 11, wherein the edge portion is substantially impermeable to process fluids.

Claim 13 (original): The method as defined in claim 11, wherein the edge portion comprises a liquid silicone gasket for impeding leakage of the process fluids.

Claim 14 (original): The method as defined in claim 11, wherein the edge portion comprises a silk screened gasket for impeding leakage of the process fluids.

Claim 15 (canceled).

Claim 16 (canceled).

Claim 17 (canceled).

Claim 18 (canceled).

Claim 19 (canceled).

Claim 20 (canceled).

Claim 21 (canceled).

Claim 22 (canceled).

Claim 23 (canceled).

Claim 24 (canceled).

Claim 25 (canceled).

Claim 26 (canceled).

Claim 27 (canceled).

Claim 28 (canceled).

Claim 29 (canceled).

Claim 30 (canceled).

Claim 31 (canceled).

Claim 32 (canceled).

Claim 33 (canceled).

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Claim 34 (canceled).